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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,211

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Makoto Asai

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03/30/2009

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EXAMINER

PATEL, REEMA

ART UNIT

PAPER NUMBER

2812

MAIL DATE

DELIVERY MODE

03/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,211	Applicant(s) ASAI ET AL.	
	Examiner REEMA PATEL	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is in response to an amendment filed 11/26/08.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter

2. The indicated allowability of claims 6-10 is withdrawn in view of the newly discovered reference(s) to Kwak et al. (U.S. 6,551,848 B2) and Krames et al. (U.S. 6,229,160 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwak et al. (U.S. 6,551,848 B2; "Kwak").
5. Claim 6 is a product-by-process claim and will hence be examined according to the structural limitations implied by the method steps disclosed (MPEP 2111). Regarding claim 6, Kwak discloses a light emitting diode (LED) which comprises a crystal growth substrate (22), a semiconductor layer (24) on the crystal growth plane of the crystal growth substrate (col 4, lines 8-12), at least one of an output plane and reflection plane (col 4, lines 30-35, col 5, lines 7-15).

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6. Regarding the limitation that the peak luminous wavelength of the LED is less than 470 nm, Kwak discloses that the LED emits blue light (col 1, lines 25-31). Examiner takes Official Notice that it is notoriously well known that blue light emissions occur in the 450 to 500 nm wavelength range. Furthermore, an advantage of selecting a peak wavelength less than 470 nm is greater external quantum efficiency. Therefore, it would have been obvious to one having ordinary skill in the art to modify the invention of Kwak with having a peak wavelength less than 470 nm so as to yield greater external quantum efficiency.

7. As to the claim language in line 4 ("...which contributes to luminous output of the device") and lines 7-8 ("owing to friction and shock generated in said shaping process"), the applicant should note that this is merely result language, and does not add any appreciable weight to the claim. Furthermore, since the prior art reference recites the same structural limitations as in the applicant's claim, the reference is seen by the examiner as having the same results.

8. Regarding claim 7-8, Kwak discloses forming a metal layer on the output or reflection planes (col 4, lines 30-35, col 5, lines 7-15).

9. Regarding claim 9, Kwak discloses the crystal growth substrate is of an $\text{Al}_x\text{Ga}_{1-x}\text{N}$ material, wherein $x=0$ (col 4, lines 8-12).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwak et al. (U.S. 6,551,848 B2; "Kwak") as applied to claim 6 above, and further in view of Krames et al. (U.S. 6,229,160 B1; "Krames").

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11. Regarding claim 10, Kwak does not disclose the LED comprises a taper plane, which inclines to the crystal growth plane of the crystal growth substrate, is formed at least as a portion of at least one of the output or reflection planes. However, Krames discloses forming a tapered plane which inclines to a substrate of the LED device and is formed as a portion of at least one of the output or reflection planes (col 3, line 66 – col 4, line 10; Fig. 2). The advantage of this structure is increased light output efficiency of the LED device (col 3, lines 22-24). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kwak with forming a tapered plane, as taught by Krames, so as to increase the light output efficiency of the LED device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REEMA PATEL whose telephone number is (571)270-1436. The examiner can normally be reached on M-F, 8:00-4:30 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571)272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. P./
Examiner, Art Unit 2812
3/23/09

/Alexander G. Ghyka/

Primary Examiner, Art Unit 2812